Hubbell Industrial Controls, Inc.

Transfer Switches

LX-450 Automatic Transfer Switch • LX-440 Non-Automatic Transfer Switch

June 2001 (replaces March 2001)

400 Amp switch

Hubbell LX-450, LX-440 transfer switches provide dependable transfer of power between preferred and emergency power sources. The compact modular design is suitable for emergency and standby system applications and is available in 100 through 1250 amps in 2, 3, and 4 pole configurations. The LX-450 and LX-440 transfer switches are UL 1008 listed to 480VAC and greatly exceed the UL requirements for withstand and closing.

The LX-450 and LX-440 transfer switches have the highest short-circuit withstand ratings in the industry:

- 100 Amps rated at 42k Amps when used with circuit breakers
- 200 Amps rated at 50k Amps when used with circuit breakers
- 260-600 Amps rated at 65k Amps when used with circuit breakers
- 800-1250 Amps rated at 85k Amps when used with circuit breakers

LX-450 and LX-440 transfer switches are double throw, mechanically interlocked, electrically operated. As the Hubbell name implies, these switches were designed, constructed and tested for heavy-duty applications to assure dependable operation.

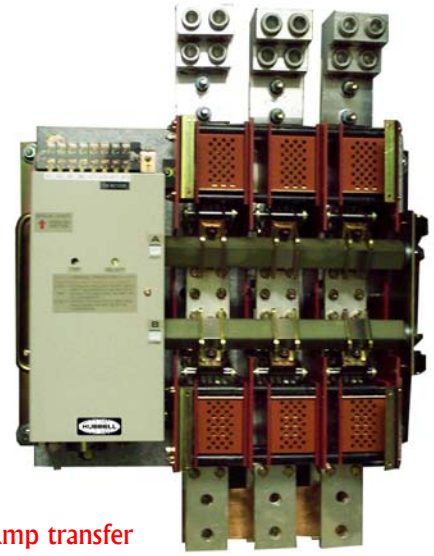
Standard Features

- Meets United States National Electric Code requirements
- Rated for emergency and standby applications
- Type 4/12 enclosures are standard, types 3R and 4X are optional
- Adjustable closed differential voltage monitor of all phases—preferred source
- Adjustable voltage/frequency monitor of all phases—emergency source verifies voltage and frequency levels before transfer is initiated
- Adjustable solid-state time delay—on engine starting to override momentary outages and prevent unnecessary transfers
- Adjustable solid-state time delay—transfer to emergency; starts engine but delays transfer
- Adjustable solid-state time delay—on retransfer of load to preferred source, to allow stabilization of preferred source prior to retransfer
- Adjustable solid-state time delay—override on momentary outages of emergency source, if preferred source is available
- Test switch to simulate preferred power failure which is automatically overridden if the emergency source fails
- Manual disconnect switch for manual operation—disconnects power from drive mechanism and allows only manual operation
- High speed transfer, as low as 60ms
- 1PDT Aux. contact on preferred and emergency sides
- 2PDT engine start contacts

LX-450, 100Amp
Type 3R enclosed switch

Standard Features, cont'd.

- Quick disconnect plugs on wire harness
- Status LED's—transfer to emergency, retransfer to preferred, frequency okay, preferred and emergency available, engine running unloaded/cooldown
- Easy access to AlCu field wiring terminals
- Easy access to control wire terminal blocks for field connections, custom configurations available



1000 Amp transfer switch

Contacts

- High interrupting and withstand capacity
- Contact tips provide good wipe and roll action and made of Silver refractory for no stick weld resistance and cool temperature rise
- Dual snap action contacts prevent flashover and provide clean arc interruption
- Self locking operating mechanism employs no magnetic holding
- Positive mechanical and electrical interlocking prohibits automatic transfer to a dead source or connecting both sources at once
- Wide contact air gaps and positive "both-off" positioning for "source to source" isolation
- Inter-pole barriers to eliminate phase to phase arc flashover

Ordering Information

LX	450	A	3	3	A	6	C	A
	Type	Ampere Rating	Number Phases	Number Wires	Voltage	Frequency	Enclosure Type	Options
	450 - Auto. 440 - Non-Auto.	A - 100 B - 200 C - 260 D - 400 E - 600 F - 800 G - 1000 H - 1200	1-Single Phase 3-Three Phase	2 - 2 Wire 3 - 3 Wire 4 - 4 Wire	A - 208 B - 230 C - 380 D - 415 E - 480	5 - 50 Hertz 6 - 60 Hertz	A - Type 1 B - Type 3R C - Type 4/12 D - Type 4X Stainless P - Open Type	A - Standard - If options are included, use code from options sheet

Example: Automatic transfer switch rated 100 amp, 3 phase, 3 wire, 208 volt, 60 hertz, type 4/12 enclosure, standard
Catalog number LX450A33A6CA

LX301 Solid State Control Module

Control Module Features

- 2PDT contacts for engine start signals
- Module is adjustable from 120-600V, 50-60Hz
- Quick disconnect plugs for easy removal

Voltage & Frequency Sensing

- Adjustable close differential voltage sensing of all phases of normal source
- Pick-up voltage adjustment from 85% to 100%
- Drop out voltage adjustment from 75% to 98% of pick-up
- Voltage and frequency sensing on all phases of emergency
  - Voltage adjustable from 85% to 100% of nominal
  - Frequency adjustable from 90% to 100% of nominal
- Voltage and Frequency sensing available for single or three phase operation

Status LED's:

- Normal source voltage available
- Emergency source voltage available
- Emergency source frequency okay
- Transfer to emergency timing
- Retransfer to normal timing
- Engine cool-down timing

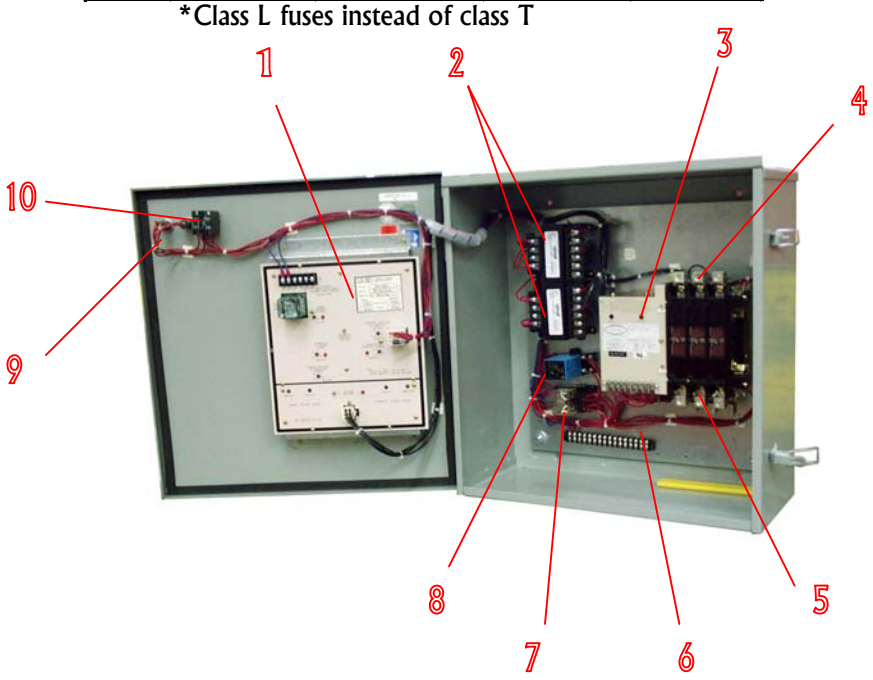
Field adjustable

- Time delay to override momentary normal source outages to delay all transfer switch and engine-starting signals—adjustable zero to six seconds
- Transfer to emergency time delay—adjustable from zero to five minutes for controlled timing of load transfer to emergency
- Retransfer to normal time delay—adjustable two to 30 minutes with automatic bypass if emergency source fails
- Time delay for running engine unloaded (cool-down)—adjustable from two to thirty minutes

Contact Withstand Ratings:

Amp Rating	w/Current-Limiting Class T Fuse		w/Circuit Breaker	
	Fuse Size (Amps Max.)	Amperage (Max.)	Breaker Size (Amps Max.)	Amperage (Max.)
100	200	200,000	125	42k
200	300	200,000	250	50k
260	350	200,000	400	65k
400	600	200,000	600	65k
600	800	200,000	600	65k
800	1000	200,000	1200	85k
1000	1250	200,000	1600	85k
1250	1600*	100,000	1600	85k

*Class L fuses instead of class T



Switch Features

1. Control module
2. Control transformer
3. Transfer switch
4. Customer connections normal side
5. Customer connections emergency side
6. Control circuit connections
7. Transfer control relay
8. Neutral time delay relay
9. Normal & Emergency pilot lights
10. Test pushbutton

LX450, LX440 approximate dimensions for type 4/12 enclosed switches

Amp Rating	H	W	D
100	20"	20"	8"
200	24"	24"	8"
260	48"	24"	12"
400	48"	24"	12"
600	56"	30"	16"
800-1250	66"	36"	16"

Field wiring terminals are suitable for copper or aluminum wire:

Transfer Switch	Wire Size
100 Amps	#10 AWG-1/0
200 Amps	#6 AWG-150 MCM
260 Amps	#6 AWG-350 MCM
400 Amps	One #4 AWG-600 MCM or Two 1/0-250 MCM
600 Amps	Two #4 AWG-600 MCM
800 Amps	Three #4 AQG-600 MCM
1000 Amps	Four #4 AWG-600 MCM
1250 Amps	Four #4 AWG-600 MCM

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